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Foreign Miscellany.

STEAM NAVIGATION.

Soon shall thy arm, unconquered Steam, afar
Drag the slow barge, or drive the rapid car;
Or, on wide-waving wings expanded bear
The flying chariot through the fields of air.

When Darwin hazarded these bold predictions, it was little foreseen that ere half a century had elapsed, not only barges and cars would be running by "simmering cauldrons," but that mighty ships would be wafted over the ocean; and even the latter problem, the "flying chariots," has been pronounced feasible by the investigations of Sir George Cayley; and it is actually now under an ardent schemer's consideration. Indeed, having already witnessed the amelioration of the habits and intelligence of men, by the free intercourse with the agents of commercial and social improvement which steam navigation has supplied, we ourselves marvel at nothing, but to each intellectual exertion emphatically cry, PERGE!

We have so fully and so often expatiated on steam, and its wide application, in the pages of this Magazine, that, for the general details of its rise and progress, we have only to recommend our readers to try back, while we give a *resumé* of its actual state and prospects at the opening of the year of our Lord 1843. We have shown that this naval prime-mover rows and pumps, weaves and spins, lifts and carries, mines and prints—in a word, in all that stimulates commerce, enlarges production, and improves manufactures, that it is, terrestrially speaking, omnipotent. At present, the use of this power adds incredibly to our population; in one department alone, as a worthy naturalized foreigner assured us, it is doing the work of more than millions of *spinsters*, (spinners.) The paddles and railways have already made an abridgement of space and time, which must have a large effect on the whole habits of our social being; and the alliance of steam with the press, the factory, the ship, and the road, is a wonderful triumph of science. But grand as this progress has been, by a parity of reasoning it is still capable of great extension and improvement; for no art was ever carried to its *ne plus ultra* of perfection in the beginning. As a proof of the power of machinery in Great Britain, Mr. W. Pare, at a public meeting lately held at Birmingham, stated, in proof of the increase of the powers of production by the improvement of machinery, that in 1792, the machinery in existence was equal to the labor of 10,000,000 of laborers; in 1827, to 200,000,000; and in 1833, to 400,000,000. In the cotton trades, spindles that used to revolve 50 times in a minute, now revolve in some cases 8,000 times in a minute. At one mill at Manchester, there are 136,000 spindles at work, spinning 1,200,000 miles of cotton thread per week. Mr. Owen, at New Lanark, with 2,500 people, daily produces as much cotton yarn as will go round the earth twice and a half.

Early in the present century strenuous efforts were made by spirited individuals to induce steam into general navigation, and the effect upon shipping was so rapid, that, in the following tabulated view, we can hardly believe we are only looking at decennial periods:

Place.	1814.		1824.		1834.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
England,	None.	None.	80	8,642	301	27,059
Scotland,	1	69	29	2,682	77	8,187
Ireland,	None.	None.	5	409	46	8,183
Guernsey, Jersey, & Man,	None.	None.	2	214	6	711
British Plantations,	1	387	10	3,792	32	6,595
Total,	2	456	126	15,739	462	50,735

The adoption of steam-vessels in every direction upon the ocean, as well as on the rivers and lakes of every civilized country, has produced, and is daily producing, results to the great human family, which it is impossible yet to estimate. England and the United States of America, *i. e.*, parent and offspring, have kept far ahead of all other countries in the energy with which they have availed themselves of this advantage, and thrown new and wonderful facilities into international commerce and intercourse. "From the earliest times," says a modern writer, "mankind have been baffled by the uncertain elements of the winds and waves; by these a barrier was raised to the progress of navigation which the boasted improvements of modern times were never able to overcome; and the proverbial uncertainty of a sea-voyage, continued accordingly to be ranked among the irremediable evils of life. Hence it was, that when a voyage of a few miles might be protracted to several days, those great rivers and inlets of the sea, which penetrate far into the land, instead of being of unrivalled utility to commerce, formed rather a drawback, in many cases, to our internal communications; for, with respect to rivers, no attempt could be made, with the least advantage, to navigate them against the stream. We possessed no power that could accomplish this object. The use of a river, as an instrument of internal intercourse, was, in consequence, much limited."

Now, however, navigation need no longer be impeded by the uncertain action of the wind or the opposing effort of the tide, since the new power is perfectly manageable, and acts in both directions, almost with equal efficacy. By means of this ubiquitous locomotive, all our means of communication, whether by sea, by river, or canal, have been multiplied to an almost indefinite extent. At present there

are upwards of 1,000 steam-vessels of all sizes in the United Kingdom, and there are between 80 and 100 built annually; the actual number, however, is difficult to arrive at, because there are many which were never registered. But there is an official return, sufficiently near our date, to illustrate its epoch. In the report of the commissioners appointed by the Privy Council, in 1839, to inquire into the subject of steam-vessel accidents, we find information not comprised in any other public statement. In the course of their investigation of the subject, the commissioners obtained detailed intelligence of 83 unregistered steam-vessels, nearly all of which were used to convey passengers. Of these vessels, some plied on the Mersey, on the Humber, on the Thames, and on the rivers of the east of Scotland; and the commissioners observe that there are, no doubt, many others unregistered, at ports which they did not visit. The great number of such vessels may be conceived, from the statement of the report, that while there were only 25 registered steamers in the Humber, Ouse, and Trent, there were 26 unregistered; and that at Liverpool there were 39 registered, and 37 unregistered. It is also difficult to ascertain to what place many vessels properly belong. "Two Liverpool companies alone," says the report, "possess more vessels than the total number registered there. Of the large number of trading steamers between Ireland and Liverpool, some of which are registered in English, and some in Irish ports, we (the commissioners) were informed that nineteen-twentieths are owned in Ireland." It further states, that of the 766 steam-vessels which they ascertained then to belong to Great Britain, Ireland, Guernsey, Jersey, and Man, 484 may be considered as river steamers and small coasters; and 282 as large coasters and sea-going ships. The annexed table, constructed from the custom-house returns, will show the approximate number, tonnage, and power of vessels belonging to the mercantile steam marine of the United Kingdom and its dependencies, at the end of the year 1838:

SIZE OF VESSELS.	No. of Vessels.	Horse Power.	Tonnage. Registered.	Tonnage. Engine room not registered.	Tonnage. Total.
Under 50 tons, - - - -	256	25	6,106	10,816	16,922
From 50 to 100, - - - -	145	47	10,267	7,458	17,725
" 100 to 150, - - - -	84	90	10,034	7,761	17,795
" 150 to 200, - - - -	63	120	10,982	7,147	18,129
" 200 to 300, - - - -	76	147	16,654	10,839	27,493
" 300 to 400, - - - -	41	266	14,247	7,580	21,827
" 400 to 600, - - - -	10	300	4,488	3,506	7,994
679 tons, - - - -	1	450	679	661	1,340
1053 tons, - - - -	1	500	1,053	810	1,855
Registered vessels in 1838, -	677	54,361	74,510	56,578	131,080
Found without register, -	83	50	4,154	5,484	9,638
Guernsey, Jersey, and Man,	6	100	832	618	1,450
British Plantations, - -	44	140	8,411	7,253	15,664
Total, - - - -	810	63,250	87,907	69,933	157,840

Here is abundant food for reflection, and a striking type of the times we live in. Our preceding decennial table, exhibited the extraordinary increase of vessels to 50,735 tons in 1834; and here we find that the tonnage more than tripled in the following four years! And both these returns are independent of the mail-packets, government craft, and steam men-of-war. But though the period of this advance was small, the progress was regulated with caution. Steamers were first brought into use in this country on the Clyde, and they were soon afterwards plying about England, Scotland, and Ireland, to the rapid increase of beneficial intercourse of the capital with all parts of the Empire. The next step was to steam it across the British Channel, then to the coasts of Spain and Portugal, and soon afterwards to the Mediterranean and Baltic seas. At each advance, experience prompted improvement, and, emboldened by constant success, steam now looked to America and India; and might have assumed *Vires acquirit eundo* as her motto.

Still the doctors differed as to the limits of this extension of steam navigation. Dionysius Lardner, a very triton among minnows, took the field with the magnanimous resolution either to burke the Great Western project, or so smite, as to cripple it. With this *luminous* fancy in view, he not only wielded the goose-quill, but also sported his person in Bristol, where he held forth that, to attempt a voyage across the Atlantic by steam, was "as vain as would be one to the moon." Such was the *dictum;* but the Bristolians, who are no fools on a march, marvelled that such a question could be raised, knowing well that our steamers had not only navigated the Mediterranean and the Baltic, but that the Atlantic had already been crossed, and India visited by way of the Cape. They therefore flew in the face of the schoolman's temerarious prediction, and fitted out the Great Western. As all the world knows the gratifying result, it is needless to say more than that she performed the voyage with such celerity, safety, and punctuality as floored all opposition. Since then, her arrivals and departures are as decidedly fixed as those of a mail-coach; and it was only a few short months after the learned Doctor's diatribe against the practicability of making the trip that we saw, in the very same room where the spouting took place, this placard:

The Great Western, Lieutenant Hosken, R. N., Commander, is intended to sail—

From Bristol.	From New York.
4th June,	9th May,
25th July,	1st July,
12th September,	18th August,
7th November.	10th October,
	8th December.

The first voyage of the Great Western was one of the highest *steam* interest, on account of certain misgivings occasioned by the doubting of the Gothamites. It is true, that the Atlantic ocean had been crossed in 1819 by the Savannah, in 1828 by the Curacoa, and that the Sirius had started, in 1838, for that purpose; but it was considered, by the loudest arguficators, that the dependence of those vessels upon steam-power was incomplete. The voyage of

the Great Western practically settled the problem of steaming over the *Herring Pond*, and is therefore considered as having founded a permanent mode of transportation between two noble countries. Dr. Lardner, indeed, in his work on the steam-engine, 1836, had pronounced the projected intercourse between London and New York by steam to be utterly impracticable; and thereupon betook himself to figures, which are admirable materials for raising a fog. So, by the aid of the said figures, he stated that the extreme limit of the practicable steam-passage across the Atlantic would be from the western coast of Ireland to Halifax, a distance of about 2,200 miles; to perform which, by his assurance, would require an average time of 19 days. In April, 1838, however, the Great Western left Bristol for New York, a distance of 3,500 miles, and in 15 days landed her passengers on the Broadway. She has since performed the homeward passage in 12½ days, a rate equal to 280 miles per diem; and she has logged 8¾ knots with a fresh breeze right in her teeth. Well might the graphic historian of this voyage say: "An appropriate figure-head for our ship would be, Vulcan with Neptune by the beard, and old Æolus fairly under foot."

At her departure on the fisrt voyage, the Great Western had on board 660 tons of coal, of which only 452 tons were used on the passage: and in several of her subsequent voyages the average consumption of fuel has been 27 tons a day. The experiments of Captain Hosken upon the engines, to ascertain the speed of the vessel relatively with the degree of power applied, and the required consumption of coal, yielded these results:

Power of steam to the square inch.	Revolutions per minute.	Miles per hour.	Cwt. of coals per hour.
3½ lbs., or full steam, -	15½	12¾	28
8-10ths of 3½ lbs., - -	15	12½	27
7-10ths do., - - -	14	12¼	26
5-10ths do., - - -	13	11	23

These gradations were arrived at by the cramm, a part of the engine adapted to "cut off the stroke," to any desired proportion, which is done by its action on one of the principal valves, in such a manner as partially to close it. The proof of the amount of pressure was shown by an instrument called the indicator, which was screwed upon the cylinder—communicating with it from within for the purpose, and which, by the action of the engine, most ingeniously given to it, described with a lead pencil upon paper a parallelogram, cutting off one corner, showing the precise vacuum in the cylinder. and by this the proportion of power applied. The engines were computed at 225 horses' power each; and their whole number of revolutions during the voyage was 287,324.

Upon these grounds, it is probable that this ship will be cited by the future historian of ocean-steamers; she therefore demands especial record on our pages. She was built pursuant to order from the Steam Navigation Company, who spared no expense in turning her out a perfect union of stability, power, and magnificence. She is 1,340 tons registered admeasurement. The floors are upwards of 200 feet in length, firmly dowelled and bolted; and she has stowage for 800 tons of coal, or coal and cargo combined, without encroaching upon the space of her provisions and water for 300 people. The state-rooms and other accommodation for passengers are roomy and excellent, with every attribute of comfort.

The saloon is 75 feet long, by a breadth of 21 feet, exclusive of the recesses on each side, where the breadth is 34 feet, and the height is 9 feet clear of the beam. This superb saloon is tastefully decorated, and fifty of the panels are adorned with paintings from the well-known pencil of Mr. Parris. Such being the secondaries, it is hardly necessary to add, that the more essential parts of the vessel, and all her machinery, are examples of mechanical skill and ingenuity, which cannot, at this day, be surpassed. When we visited this "pink" of steamers, we were rather disappointed with her outward appearance, since the lightness of her spars and gear rendered her bearing so inferior to the imposing grandeur of a man-of-war, as to present the difference between a canoe and a launch. But the splendor of this floating palace's interior is truly striking; and the tastefulness of her decorations has been ascribed to a cause somewhat similar to that, which notoriously influences those fine vessels, the American liners, a cause thus shown by a transatlantic writer: "The ladies of the ships'-captains of New York form a body, if they could be seen in the group, of the most beautiful and splendid women in existence. To this we have long since, philosophically, attributed the splendor and beauty of the packet-ships. Elegant women naturally communicate their taste and style, a portion of their very soul and being, to their husbands; their husbands, in this state of charming magnetism, infuse a portion of the same taste into their ships; and thus we are indebted to lovely women for our lovely ships."

But, notwithstanding the undeniable handsomeness of the Great Western, there were not wanting those who considered beauty but as "skin-deep;" and, while some whispered that she was over-lively at sea, others predicted that she would soon be a coffin for her passengers; while a third part declared that she was already sadly strained in some parts, and bedevilled in others. To meet these unfounded allegations, a scrutiny was instituted, and the following report was made to Captain Claxton, the Steam Navigation Agent:

LLOYD'S REGISTRY OF BRITISH & FOREIGN SHIPPING,

LONDON, *January* 11, 1840.

DEAR SIR: In reply to yours of the 9th instant, requesting my opinion of the "Great Western" steam-ship, as to her condition and signs of working after having performed twenty-two voyages across the Atlantic, amounting in the aggregate to 75,000 nautical miles, I have much pleasure in stating, that on examining her in the dry-dock at Bristol, on the 7th and 8th instant, I found her to be in perfectly good condition, free from any indication of defect inside; the copper smooth, and without any appearance of straining outside.

My attention was particularly directed to the trusses immediately before and abaft the engine-room,

where the first indications of straining and movement in steam-vessels are invariably given, and I found even less straining and yielding there than is commonly seen in much smaller vessels at the same age, and after so much service; *in fact, I found the abutments there to be in the same state as when I examined them whilst receiving her machinery on board in London.*

The fact of the copper being smooth and free from wrinkle, the bottom and keel fair and regular under the engines and along her entire length, the abutments of the trusses close, and the butts aloft perfect and unbroken, are in my opinion conclusive proofs of her freedom from any straining which can by possibility affect either her safety or durability; and I heartily congratulate you upon the successful result of this magnificent experiment in steam navigation.

I am, dear Sir, your obedient servant,

GEORGE BAYLEY.

Surveyor of Shipping for Lloyd's.

Experience had already shown the great advantage of large over small steamers, because the capacity and buoyancy of the vessel increase in so much larger a ratio than the resistance; but, in order to obtain sufficient room for carrying the enormous supply of fuel required for a voyage across the Atlantic, and at the same time to allow accommodation for passengers and cargo to a remunerative amount, it was necessary to build vessels of extraordinary size. The following table shows the dimensions of the hull and machinery of three of these ocean-going vessels:

DIMENSIONS.	Great Western.	British Queen.	President.
Length, extreme, - - - - - feet,	236 0	275 0	265 0
" under deck, - - - - "	212 0	245 0	238 0
" keel, - - - - - "	205 0	225 0	220 0
Breadth within paddles, - - - "	35 4	40 0	41 0
" over paddles, - - - "	59 8	64 0	64 0
Depth of hold at midships, - - "	23 2	27 6	23 6
Tons of space, - - - - - tons,	6791	1053	
" of engine-room, - - - "	641½	963	
" total, - - - - - "	1340	2016	1840
Power of engines, - - - - horses,	450	500	540
Diameter of cylinder, - - - inches,	73	77½	80
Length of stroke, - - - - feet,	7 0	7 0	7 6
Diameter of paddle-wheels, - - "	28 9	30 6	31 0
Weight of engines, boilers, and water, tons,	480	500	500
" coals, 20 days' consumption, "	600	750	750
" cargo, - - - - - "	250	500	750
Draught of water, - - - - feet,	16 8	16 7	17 0

Vessels of iron, which had now begun to be constructed both for rivers and for navigation in the open sea, were found to have many advantages over ships of wood; being lighter, more buoyant, stronger, cleanlier, less liable to hogg, and more capable of stranding or beating on rocks, without imminent injury. The Tigris, Euphrates, Alburkha, Quorra, Albert, Wilberforce, and other iron vessels, were built for the grand river explorations recently undertaken; and the facility with which the materials may be moulded into any shape, proved the advantage of iron for such purpose. The vessels are formed with rib-frames at intervals, and with longitudinal hoops of iron; and they are covered with iron plates, which are fastened to the ribs by bolts or rivets. The lower part of the interior may be divided into compartments, and strengthened by means of water-tight bulkheads, and thereby confine the effect of an accident (from collision, striking on a reef, or from any other cause,) to the particular division of the vessel in which it originates. In this case, the expense and labor of large pumps is unnecessary, as the compartment can only fill to the level of the external water, and then may be emptied at leisure; or, if the leak be greater than the discharge of a small hand-pump, that compartment may remain filled until a port is reached.

It is a matter of dispute among our savans, whether this useful adoption was first suggested by Dodd, in 1818, or Mr. C. W. Williams, of the Dublin Steam packet Company, who fitted the Garry Owen with them. Inventions are most difficult to track. Large editions of the Dance of Death, now called Holbein's, were published many years before he drew breath! The French glory in the invention of the guillotine during their recent revolution, but the *honor* is due to Italy; in proof of which, let any doubter repair to the church of the *Madonna della Quercia*, in Rome, and there he will see a certain Signora Frabrizio in the very act of suffering from the knife of this expeditious implement, in a picture painted in 1450. The use of rockets in our army takes date from Colonel Congreve's invention, only in the present century, yesterday, in fact; but they have been constant missiles in India from the time of Alexander the Great, and, from the dexterity with which he was saluted, had probably been used for ages. So in the present case, without at all undervaluing the *adoption* of water-tight bulkheads, we are bound to give the *invention* to the Chinese; and we well-remember examining such partitions in a huge war-junk at Chuenpee, long before the talents of Messrs. Dodd and Williams were exerted upon steam-vessels, the method, then, of course, having been immemorially practised among the Celestials.

Towards the close of the year 1839, the Ironside, the only iron sailing-ship then in the kingdom, arrived in Liverpool from Pernambuco, after accomplishing her second voyage to South America. She admeasured, only 261 tons; yet, though a fine model, brought home a cargo principally of sugar, amounting to 310 tons of dead weight, the thinness of her sides, and lightness of her hull, as compared with wooden vessels of that tonnage, giving an advantage in stowage and buoyancy. She conveyed 328 large cases of sugar, and 762 bags of cotton, besides a quantity of hides, and never, on any occasion, made water, remaining as tight as a bottle. She was built expressly for the Pernambuco trade; and as there is a bar at that harbor, it was deemed advisable that she should be constructed without a keel, so that she might cross it with safety. It was found, however, from her buoyancy, that she could accomplish this with that appendage, so necessary to

holding a wind when beating, and she was accordingly keeled.

About the time of the Ironside's arrival, the Nemesis, a private armed steamer of 660 tons, was launched at Liverpool; and as she struck on a rock off Scilly, on her passage from Odessa, she was docked at Her Majesty's yard at Portsmouth. When she struck, her speed is reported to have been nearly 9 knots. The first blow was received exactly in front of the gripe, which was dented in about three inches, and split about 8 inches in its length. From inference, the blow was sufficiently violent to have involved a timber ship in a much more serious damage, delay, and expense. This accident, though annoying to the owners, was a fortunate incident for the public, since it established that the injury of such a casualty to an iron ship affects the part struck only; for the rivets held as tight, and the contiguity of the iron plates remained as perfect after the blow as before it had occurred. This vessel was built by Mr. Laird; her length over all being 184 feet, and her breadth 29; the depth of hold 11 feet; and the mean load draught of water 6 feet. The estimate for horse power for the two engines is 120; the diameter of the cylinder 44 inches; and the length of the stroke 4 feet. To obviate the disadvantages attendant on the small draught of water drawn, she is fitted with sliding keels on Admiral Schank's principle; and the whole internal space is separated into seven water-tight compartments. Thus the damage caused by her striking admitted 4 feet water into the compartment in which it had occurred, before the leak could be stopped, but there was none in any other part of the vessel.

Still, the sanguine statements of those who favored iron were met with coolness by those prejudiced or interested in favor of wood; and the local attraction of such a mass of metal on the compass-needle was started as an undeniable objection to iron ships. But the Astronomer Royal took the *field* in the Rainbow, and gave a theory of the magnetism induced by the iron of a ship, in which he has investigated the separate expressions for the disturbing forces or local attractions on the north end of the needle, the magnetic east, and vertically downwards. Of these, the only force which it is necessary to destroy is the second; and excellent rules for this object will be found in the Philosophical Transactions for 1839. With a view of rendering his investigation widely useful, Mr. Airy also communicated directions for correcting the compass in iron-built ships to this Magazine, Part II., 1840, p. 239.

From the high character given of the iron vessels hitherto constructed, the Great Western Steam-ship Company at Bristol determined upon a magnificent experiment. They resolved to build an iron steam-ship of such dimensions and power as should as much surpass the Great Western as that vessel had itself surpassed every steamer previously afloat; and this is now realized in the Mammoth, *alias* the Great Britain. We personally inspected every part of this huge vessel, as well as the working places around her, and were inclined, on examining the details, to listen with complacency to the confident boast that she should reduce the passage across the Atlantic to ten days. The builder, who unhappily died during her progress, was at every pains to proceed on a scientific principle, knowing that, otherwise, the greater her bulk the bigger her blunder. She is built entirely of iron, with the exception of the flooring of her decks and panellings of her cabins. The plates of the keel are from $\frac{3}{4}$ths of an inch thick in the middle, to 1 inch at the ends, and all the plates under water are from $\frac{5}{8}$ths to $\frac{1}{2}$ inch at the top, except the upper plate, which is $\frac{5}{8}$ths. She is clencher-built, and double rivetted throughout. Towards the extremities, and quite aloft, the thicknesses are reduced gradually to 7-16ths. The ribs are framed of angle iron, 6 inches by $4\frac{1}{2}$. The mean distance of the ribs from centre to centre is 14 inches, and all these ribs will be doubled; the distance is then increased to 18 inches, and then gradually to 21 inches at the extremities; 1,500 tons of iron were expended in her construction. The boiler platform is of plate iron, supported upon ten iron kelsons, of which the centre ones are 2 feet 3 inches deep. These kelsons are formed, like the floorings, of iron plates, placed on edge. The hull is divided into five distinct compartments, by means of substantial water-tight iron bulk-heads. She has four decks, the lowest of which is of iron, and appropriated for the reception of the cargo; the upper deck is flush fore and aft; and the two intermediate ones are devoted exclusively to the passengers and crew. In this space are four grand saloons, two roomy ladies' cabins, and 180 state-rooms, besides the portion assigned to the ship's company. The principal saloon is 108 feet long by 32 feet wide, and $8\frac{1}{2}$ feet high. Besides the extensive space thus devoted to the *personnel*, she has sufficient room for the stowage of 1,000 tons of coal and 1,200 tons of measurement goods. There are three boilers, capable of containing 200 tons of water, which will be heated by twenty-four fires, and she has four engines, each of 250 horse power. She is fitted with six masts, on five of which a single fore and aft sail will be carried, the mainmast alone being rigged with yards and topmast. These masts will be low as compared with the size of the hull, although the mainmast is 95 feet long; and the quantity of canvas, however inconsiderable to what she would carry as a full-rigged ship, will still be as much as would cover three-quarters of an acre of ground. The full dimensions of the vast fabric are thus:

Length of keel,	282 feet.
" over all,	324 "
Breadth,	51 "
Depth of hold,	32 "
Power of engines,	1,000 horses.
Burden,	3,200 tons.
Displacement,	3,000 tons.
Load draught,	16 feet.

The boldest feature in the Great Britain is her mode of propulsion, which is Mr. Smith's screw-propeller, by substituting which for paddles she was relieved from 100 tons of top-weight, besides admitting of the boilers and engines being adjusted in that part of the ship which is best suited to receive them, and where they best act as permanent ballast. This adoption, by relieving her breadth from the unwieldly

paddle-boxes, would also enable her to pass the present locks at Cumberland basin, and discharge her cargo in Bristol harbor, instead of putting it into lighters at Pill. The screw is placed in the dead-wood of the counter, under the stern, quite out of the way of injury; and it can readily and quickly be disconnected from the engine, when sails alone may be required.

This propeller is called the Archimedean screw; but the name is rather inapt, for it may claim almost as much relationship to a smoke-jack, as to the hydraulic Κοχλιας of the Syracusan philosopher. Yet, as we hope, from its simpler and less cumbrous machinery, it is ultimately destined to triumph over the unsightly and dangerous paddles now in use, it must be specially mentioned. We happened to witness the interesting trial made on the Thames in October, 1839, when it was fitted to a three-masted schooner named the Archimedes. Though this vessel was adapted for steaming as well as sailing, and drew no less than 10½ feet water, the experiment was quite satisfactory to every disinterested person, both as to speed, action, and the absence of the swell created by paddles; while the protection afforded by the depth at which it worked, promises to be of high importance to war-steamers. This screw is placed in a rectangular opening at the run of the vessel; it consists of a helix, making but one revolution about a horizontal axle passing longitudinally through the hip, and is put in motion by the engine's action on a combination of wheels and pinions. With a view of ascertaining its powers before adopting it, the Great Western Company hired the steamer Archimedes for some months, and made a series of experiments with screws of various size and form; and it was found that fully as much velocity, with an equality of power, could be obtained as with paddles. We have had an opportunity, in company with Capt. Claxton, of examining the results very minutely, and were so fully convinced of the efficiency and desirability of the propulsion, that we augur its final general adoption. The tremulous motion given to the vessel by the centrifugal action of the propeller, and the rumbling noise occasioned by the spur-wheels, necessary to get up the speed, are obstacles which should be easily surmounted; and several improvements were made even in the course of the experiments. Various modifications of this propeller have been proposed, as those of Captains Ericsson and Carpenter, but they are substantially the same in principle with that of Mr. Smith.

In our desire to see the paddles done away with altogether, we must not omit to mention the ingenious contrivance of Captain George Smith, for converting the upper section of the paddle-boxes into life-boats, as communicated to the Commissioners of Steam Vessels' Inquiry. We should also allude to an American practice, cited by Captain Basil Hall, which is very important for the safe management of river steamers. It is that by which the steering-wheel is situated in the fore-part of the vessels, its motion being communicated to the rudder by ropes, chains, or rods. An apparatus of this kind was used by Symington, in his tug-boat upon the Forth and Clyde Canal, about 1802; and this probably suggested the contrivance to North America.

The form, structure, and mechanism of steam-vessels, is rather the result of repeated experiments, than of any minute investigation of scientific principles: hence there is much variety of opinion among the builders. One class adopts a sharp bottom, a great rise of floor, a great breadth of beam, and round sides and water-lines; while another takes to a flat bottom, long floor, angular bilge, clear run, and sharp ends; and these peculiarities may be kept in view according as carrying or velocity are to be the predominant requisite. A steam-ship should possess the qualities that favor a rapid and steady motion through the water, combined with safety; and strength to enable it to bear, without injury, the strain of the propelling machinery. This is a most important point. The least working of a ship, so as to move, in ever so trifling a degree, the nice fitting essential to the proper action of the engine, will inevitably destroy its effect. The power, therefore, requires such modifications of arrangement as shall allow of its convenient stowage in a small space, and, in most cases, in such a position as to bring the vessel's centre of gravity as low as possible. Every means of strengthening the body, without interfering with the accommodations of the engine-room should be resorted to; and solid bottoms, caulked inside and out to above the floor-heads, with Lang's garboard strake, ought to be found in every steamer of burden. Water-tight bulk-heads or other transverse partitions, are great strengtheners of the hull; and whatever material be adopted, a steamer should be stiffened by such a system of trussing, as will enable it to bear the weight and strain of the machinery, without alteration of form. In some of the slight-built river steamers of North America, the object is effected by a trussed framing, rising to a considerable height above the deck, which distributes the weight and strain of the engine over a great space.

Our good friend, Capt. "Caroline" Drew, proves that he studies the conservation of steamers, though he might be tempted to cast one down the Falls of Niagara. He has just proposed a plan to prevent them from hogging under the immense weight of the engine-gear, and relieve them by throwing their weight upon two distant parts, much more capable of sustaining it. The Penelope is so fitted. This simple and comparatively unexpensive plan, consists of two longitudinal timbers firmly trussed together, constructed on something like the principal of an arch of a bridge. These bearers are to be covered by a platform of 4 inch plank for the machinery; so that the strongest part of the vessel will, in future, be that which has hitherto proved the weakest; while, from the stage being to a certain extent elastic, the *jar* of the frame-work will be nearly obviated.

Much attention has been given to the application of steam to sailing vessels, especially as success would hold out hopes of greatly reducing the voyage to India, so tediously lengthened by calms, currents, and adverse winds. Considered merely as a boat, to be propelled in the same direction as the line of keel, by its own internal machinery, the question of the best

form of a steamer is more simple than that of a sailing-vessel, which is acted upon by an external force, applied in various directions. The essential form of a steamer being little more than that of a solid capable of passing through the water with the least possible resistance, it has been considered incompatible with the requisite qualities for sailing. Mr. J. S. Russel, whose researches in hydrodynamics have led to the improvement of canal navigation, and to the beautiful theory of the wave-line, conceives, however, that there exists no such incompatibility, observing that "vessels built expressly for the purpose of steaming, and adapted for that purpose in the best possible way, have been found, when under canvas, to equal the fastest ships in sailing qualities." "Their great length and fine ends," he continues, "prevent them from falling to leeward; their fast formation adapts them for going through the water; their boilers and machinery form a well-placed and well-distributed ballast; their fine ends and flaring bows render them lively as sea-boats; and the small amount of their midship section, and small resistance, give them great speed under comparatively little canvas." It should also be noticed, that the grand advantage of steam-vessels over sailing ones consists rather in regularity than velocity; and that distances are now measured by days and hours, instead of leagues and miles.

Since this opinion was delivered, the Vernon, (Indiaman,) has been constructed on a principle entirely new among merchantmen. This construction was requisite to the successful application of a small steam-power for so large a ship on so long a voyage, as the space required to be allotted to the machinery and coals had hitherto been considered an insurmountable drawback; 150 tons now provide for the whole. The Vernon is 176 feet long, 36 feet beam, 22 feet deep, draws 15½ feet of water, and is 1,000 tons measurement. She is fitted with a steam-engine of 30 horse power, upon the low-pressure principle, and calculated to make in calm weather 30 revolutions in a minute, the boilers then consuming 2½ cwt. of coals per hour; and the engine is so simple in its construction as to require but one engineer and one stoker. The paddles are small, and occupy a width of only 4 feet outside the ship, fixed upon a shaft projecting about 2½ feet through, and so supported as to require neither paddle-beams, spring-beams, nor paddle-boxes; and they can be shipped and unshipped by the yard tackles of the ship. Moreover, the propelling apparatus, when at work, produces fresh water sufficiently good for the stock, as also for all culinary purposes—a valuable consideration on long voyages.

It should be mentioned, that in stating the horse power, it is an expression to denote the size of the engine, or what it ought to do; and is not quite applicable to work actually performed. "When engineers," says Mr. Taylor, "speak of a 25 horse engine, they mean one which would do the work of that number of horses *constantly* working; but, supposing the same horses could work only 8 hours in every 24, there must be 75 horses, at least, kept to produce the effect of such an engine."

The exact power of the engine employed in moving water, or rather the duty performed by the consumption of each ton of coals, is still among the desiderata; although the velocity of the centre of the floats, their area, and the number of revolutions, being known quantities, it might soon be approximated by direct experiment. We have, however, arrived at the conclusion that a low pressure, a short stroke, and a slow movement, yield the most regular duty, and remove, in a great measure, the sensible motion or jar of the engines upon the frame work of the vessel.

It is in the management of the fires that the greatest anomalies occur in computing the duty of an engine—the principle of work performed. The deficiency of boiler-room afloat, and the greater body of air admitted over the fires than is usual in shore-practice, are certainly evils which interfere with the convenience and effectiveness of the fire-box; and a considerable portion of the fuel is consumed in vain. Not only stokers, but those who command them, ought to be reminded that the speed is not increased by the rate of coals consumed. It is true that the experiments lately conducted at the works of Mr. Watt, near Birmingham, indicated that the consumption of fuel under marine-boilers is less than under land-boilers; but the sea-practice could not be so tested, and had no more to do with stoking afloat than the gun-practice at Woolwich has to do with that on board the Excellent. Dr. Lardner, whose work is one of research, though his limiting conclusions mar his authority, assumes, as the result of extensive inquiry, that 10 pounds of coals per horse-power will carry a sea-going steamer, adapted for long voyages, 7¼ miles direct distance; and, therefore, to carry her 100 miles will require 138 pounds, or 1-16th part of a ton nearly. But he also hardily says, that a certain quantity of coals will take a steamer the same distance under all circumstances, nor does he care how long she is about it. This would, perhaps, be pretty nearly true, had the boilers no safety-valve; did no steam escape out of them, except through the cylinders; and, did the paddles revolve in a perfectly resisting medium, propelling the vessel at every revolution a distance equal to the wheel's circumference. What an accurate log might then be made of the said wheel! There is also another condition which interferes with the Doctor's postulate, and that is, the stoking, or management of the fire-box; it is a reproach to the present advanced state of science and practice, to see the disgraceful abundance of smoke which pours from the funnels, thus losing a mass of combustible matter, without its having produced any useful effect. This evil must be cured. In the mean time we advise the use of the dampers, or some other means of regulating the fires, so as to keep them down to the supply of a proper quantity of steam, and no more, as a prodigious saving of fuel.

But what an annihilation of every difficulty is promised us by those philosophers who are bent upon making STEAM succumb and give place to ELECTRO-MAGNETISM as a motive power! Many experiments were made in 1838 and 1839, on the Neva, by M. Jacobi, but the embarrassment and difficult manipulation

of the battery, and the want of insulation in the machines, proved obstacles to success; though the results were sufficient to generate the Professor's sanguine hopes of ultimately succeeding. Several patents and caveats were entered in America; but it was concluded, by various and well-conducted experiments, that the attainment of an available motive power by the electro-magnetic influence, was a thing not to be hoped for in the present state of our knowledge upon that subject. Still the object was pursued, and as the machine depends for its action upon a change of poles, some ingenious arrangements have been proposed; and our friend, Mr. Dillwyn Llewellyn, of Penllegare, in Glamorganshire, has been very successful in the propulsion of a boat. The question as to practical utility is, however, about to be solved. In 1841, Mr. W. Petrie, of Croydon, took out a patent for a new mode of obtaining a motive power by voltaic electricity, which appears to possess some eminent advantages over the former principle. The inventor claims nothing new in the helices, magnetizing, prevention of electric sparks, or current-changers, though they are severally ingeniously modified; but his title to privilege is based on the new application of the defective action which exists between electric currents and magnets, for the purpose of obtaining a moving power. The physical law rendered available by Mr. Petrie's machinery is, that "any conductor of electricity, as a metallic wire transmitting an electric current, tends to move either pole of a magnet in a direction tangential to the circumference of the wire, opposite poles are deflected in contrary directions." Hence it follows, as a consequence of this law, that a magnet so supported as to be left free to turn in every direction, when acted on by a wire transmitting an electric current, in all cases turns to set itself in a cross position relative to the wire.

We own that a close inspection of this machine, its power, its advantageous form, and its comparatively trifling expense, made us yearn for its success; more especially as we sometimes entertain misgivings on the alarming increase of coal consumption.*

The ratio of Mr. Petrie's power increases so, that making an engine three times the height, length, and breadth, increases its horse-power eighty-one times, although the battery is only nine times the size.

To return to steam. Although we have principally treated of private and commercial vessels, the progress of steam navigation in the Royal Navy has been so simultaneous with what is here described, that the two branches are in a manner identified. But as this splendid triumph of ingenuity constitutes an epoch in the history of the mechanical arts, every exact particular is of moment. The use of steam in our royal yards commenced early in the present century, in the humble operation of dredging. That power which has, in a brief space, essentially contributed to quicken industry and diffuse civilization, was then employed in scraping up silt, sand, and feculent mud! Even for some time after its more important marine uses were developed, the Affectionate Friends viewed it coldly, as if *Government* were to follow the *merchant* in adopting improvements. It was not till 1828 that the Navy of England possessed a single steam-vessel. The smash of those "friends" introduced a better spirit; council of a different cast came in, and the navy now boasts nearly one hundred steamers, of which we select the following as gratifying specimens; and we will submit details unusually full, because the subject may even yet be deemed new. The Vanguard and other noble ships which the new surveyor built, were rather expected, from the known talents of Sir W. Symonds; but as it was entirely a new demand on construction, and one requiring peculiar adaptations, few could have expected such splendid steamers as the Cyclops, the Gorgon, and the Devastation at the same hands.

DIMENSIONS.	Medea.	Devastation.	Gorgon.	Cyclops.
Length over all, - - - feet,	204 10	203 8	205 6	216 6
" between perpendiculars, "	179 4½	180 0	178 0	190 0
" under deck, - - - "	157 5	156 1	152 2	163 6
" keel for tonnage, - - "	180 2	182 6	182 6	194 6
Breadth extreme, - - - "	31 11	36 0	37 6½	37 6
" moulded, - - - "	30 11	35 0	36 4½	36 4
" over paddle-boxes, - "	52 4	54 7	54 8	57 6
Depth of hold, - - - - "	20 0	21 0	23 0	23 0
Displacement light, - - - tons,	501	640	732	749
" load, - - - "	1176	1583	1685	1830
Burden register space, - - "	423	589	503	551
" engine-room, - - "	384	390	515	578
" total (new rule,) - - "	807	980	1018	1129
Engines power, - - horses,	220	400	320	320
" press. on safety valve, - lbs.,	3¾	3½	3	4½
" diam'r. of cylinder, inches,	55½	54½	64	64
" length of stroke, - - feet,	5 0	6 0	5 6	5 6
" load strokes per min., - No.	19	13	14½	16
" value with boiler, - £	13,080	20,146	20,650	22,156
Paddle-wheels diameter, - - feet,	24 6	25 6	27 0	26 8
" load immersion, "	6 5	6 0	4 6	4 7
Maximum steam-speed, - kts. fms.,	10 35	10 97	10 0	11 0
Coals in boxes, - - - - tons,	230	327	345	467
" per hour, per horse, - - lbs.,	8	8¼	9 4	7
Weight of furniture, stores, &c., tons,	385	540	487	992
Draught of water fore, - - feet,	12 11	14 8	16 6	15 11
" aft, - - "	14 0	14 9	17 0	17 5½
Complement seamen, - - No.,	105	105	122	122
" marines, - - "	20	20	25	25
" boys, - - - "	20	20	28	28
Armament 84-pounders, - - "	2	2	2	2
" 68-pounders, - - "				4
" 32-pounders, - - "	2	4	4	0

In the above conditions, it must be borne in mind that there is the greatest difficulty in giving the speed, as all the reports differ, owing to trials being made under different circumstances of light or load immersion; and the averages are only obtainable by a laborious examination of multitudinous documents. The reader will also recollect, that the true criterion of the best steamer is the comparison between the number of tons displacement (not the vague quantity termed tonnage) and the number of horses' power.

To these data, on which implicit reliance may be placed, we will subjoin a few further details upon one vessel—the Cyclops, for instance—which will afford a clue to illustrate the others by. She has two engines, of one hundred and sixty horse power each, by Seaward & Co., with metallic pistons, built on their new principle, which dispenses with cast iron side-frames and sway-beams. By this method, a reduction of upwards of sixty tons is made in the weight,

* A word upon fuel. As the French have lately contrived to boil soap by reflecting the sun's rays from various mirrors on the bottom of the boiler, it has been conjectured, by a *schemer*, that in tropical climates a steam-engine might be kept at work all day, without the expense of fuel, by means of the heat reflected from a moveable hollow hemisphere or cylinder of mirrors.

and an important saving of space is effected in the engine-room, which is sixty-five feet long. There are four copper boilers, placed in pairs, back to back, with a fore-and-aft stoke hole; and they are clothed, to prevent the heat's radiation. There is also a contrivance for warming the feed-water on its passage to the boilers, by causing it to pass through a number of copper pipes around which the spent steam from the cylinder circulates on its way to the condenser; and, moreover, the boilers are fitted with an apparatus for detecting and indicating the state of saltness, and with a receiver and means for blowing-out, when required. Her wheels are cycloidal, with forty-eight paddle boards, double, each one foot broad by eight in length, and sixteen in area. Her engine-room crew consists of four engineers, twelve stokers, and four coal trimmers; and her fuel is sufficient to propel her three thousand five hundred miles, full steaming. But what are we not to expect from the present union of skill and enterprise? Sir William Symonds has just laid down a royal steam-yacht for her Majesty, which is two hundred and six feet under deck, and one thousand and thirty-four tons: and a new war-steamer, the Watt, of which the following particulars will indicate the go-ahead system now in hand:

	Feet.	In.
Length, over all, - - - - -	248	0
" between the perpendiculars, -	220	0
" under deck, - - - - -	223	6
" keel for tonnage, - - -	192	10
Breadth, extreme, - - - -	40	6
" over paddle-boxes, - - - -	71	6
Depth of hold, - - - - - -	26	4
Draught of water, fore and aft, -	18	0
Load displacement, - - -	2,766 tons.	

With such exertion to meet the new exigence at the dock-yards, we trust that naval officers are simultaneously gaining instruction in the use of the steam-engine. Surely an officer conducting public duty, should be well aware of the effect of every command given to those in the engine-room; and as every evolution requires promptitude, the orders should be given in a spirit of practical skill. This is a point ably insisted on by our friend, Sir Charles Napier. "It will never do," says he, "it will never do in action to trust the safety of a steam man-of-war, and the honor of the British flag, to the description of men that now manage the machinery; their ideas are not accustomed to war; they are of a peculiar description of character, impatient of control, and exceedingly difficult to manage: and, as the manœuvring of the ship and the consequent advantages depend entirely on the engineer, it is most requisite that not only the captain, but all the officers, should have a competent knowledge of the steam-engine." Since this was written, many officers have become conversant with the mechanism of the steam-engine, and the service is daily becoming a better school for youngsters.

Besides the various purposes already enumerated, to which steam is applied, that portion usually wasted before a steamer starts might weigh her anchor, merely by the addition of an attachment-rod from the ordinary gear to the windlass, as proposed by Mr. J. Henderson, of Dalkeith. Steamers might also weigh the anchors of line-of-battle ships, by running alongside, with ease and despatch.

In tracing the progress of steam navigation, it is singular to note the prejudices which it has had to overcome, and to speculate on its prospects. Notwithstanding what has already been effected, many persons still entertain doubts of its efficiency in war, while others confidently predict that it will altogether supersede ships-of-the-line, and that the proud union-jack is doomed to give way to a smoke-jack.

Amongst other difficulties with which the progress of steam has been clogged, is the dislike which the seamen and officers of the navy entertained to it; for the noise, smoke, tremor, soot, coal dust, rancid oil, and other disagreeables, were so opposed and contrasted to their cleanly habits, that their objections were not to be wondered at. These evils are under melioration; but to the accustomed sailor, the steamer at sea, with all the attendant circumstances of its internal economy, will probably be an uncouth object for some time yet. Cradled on the wave, and inured to the action of the wind and sea, he will be loath to tolerate conquering the elements, instead of using them as free agents. Still this feeling will subside, and, weighing every condition, there cannot exist a doubt of the extension of this wondrous application.

That the means of naval warfare will be modified by steam is most evident, but the result of a combat must, as before, depend on the skill, spirit, and discipline of large bodies of men. Though the instances are rare, we have heard of ships being "rayther backward in coming forward;" but the future admiral will play all the men on his board, for steamers will conduct line-of-battle ships into action, or lead them out, according to the exigence. But the brunt of battle will not be upon the steamers; they may render aid to their own liners, which unwieldy machines are totally helpless and unmanageable when dismasted; and they may pick up such of the enemy as have been winged for them; but they must keep their weather-eye open. The principal objection to steam-vessels approaching within gun-shot at present, is the danger to those vital parts, the paddles, the boilers, and the machinery; but science and art are diligently bent upon lessening the risk, though perhaps it cannot be overcome. We therefore look to the Archimedian screw, the sinking of engines and boilers below the water-line, the gabionic stowage of coal bunkers about the machinery, and the prospects of voltaic electricity as a motive power, with the greatest interest, since they are grand steps towards making engine navigation effective in purposes of war. Sir Charles Napier has suggested, and with not less probability than ingenuity, that war-steamers will take the same place in fleets that cavalry have long done in armies—holding, he says, the post of honor and of danger. Upon this, Captain Basil Hall remarks: "It is a very important place, no doubt, but it is not one which decides the eventual fate of the war—*that* is always the work of the infantry. The cavalry protects the flanks, and otherwise help the infantry to get into action with that of the enemy opposed to them, and when these are broken, they cut in upon them, and do much execution. In like

manner armed steamers will guard the edges of fleets, tow three-deckers into action, and, when the enemy is discomfited, will come in with desperate effect to reap the iron harvest."

Steam navigation, however, is not to be contemplated in its bellique property only: it has directly multiplied the friendly intercourse between distant countries, softened prejudices, diffused knowledge, taught the doctrine of smaller profits and larger consumption, and infused animation into commerce; to the preservation of international peace, and the extension of Christianity. Yet it may be questioned by the philosopher, whether the ultimate benefits likely to occur to this great and happy country by facilitating conveyance at home, and rendering cheaper the products of foreign countries, may not be counterbalanced by giving rise to new necessities, and by squandering our coals, the very vitals of the country, with additional extravagance. *Nous verrons!*

The Aerial Steam Carriage.—It is understood that the first line to be established is that to India, the carriages leaving the top of the Monument, Fish-street-hill, every morning, and taking five minutes at the summit of the Great Pyramid for refreshments, and to allow the passengers a short time to stretch their legs. From this point balloons will be continually starting for the most important cities of the African Desert. The carriage is then to proceed to India; thus (should the weather be not foggy) affording to the traveller a delightful *coup d'œil* of the most interesting countries of the East. The arrangements are in every respect very complete. Lord Brougham is understood to have accepted the office of patron, being himself of rather a flighty nature. The provisions will be carried easily in the conductor's waistcoat, as by a new invention the essence of three sheep can be concentrated into a small lozenge. The waiting-room for the ladies at the Great Pyramid is of the most commodious kind, the ancient sepulchral chamber of King Cheops being fitted up in the oriental style for that purpose. Passengers who should wish to be dropped at any of the intermediate towns may be lowered by small hand balloons at the usual cab prices.

N. B. The "Rocket" Aerial steam-carriage will start on Monday next for a tour round the comet, proceeding by easy stages along the Milky Way. Sir J. Herschel has been engaged as conductor, being the only person who knows the exact road.—*London Punch.*

The Comet.—A letter from Constantinople, dated 30th March, says: "The comet continues to occupy the attention of the public. The Turks are, for the most part, convinced that its appearance is one of the signs, forerunners of the last day, and that it otherwise predicts fearful misfortunes. The phenomenon, which is gradually becoming more faint, *has carried off all the caloric from these parts.* The weather has been colder since its appearance than at any period of the winter. The thermometer has fallen at night as low as 25 deg. Fahrenheit; and the mountains upon the Asiatic coast, bordering the Propontes, have been covered with snow."

Domestic Miscellany.

Ship Alert.—This vessel was at anchor in the harbor of San Diego last October, and had nearly all her stores, and part of her ballast on shore ready for taking in cargo, when intelligence was received of a declaration of war between the United States and Mexico, and of the capture of Monterey by Commodore Jones, and that the soldiers from San Pedro (a place about three miles from San Diego) had received orders to proceed forthwith and capture the Alert. On the 28th of October the intelligence was confirmed by a party of hunters, (Americans,) who came on board the Alert with all their property, seeking protection from the anticipated movements of the hostile troops. Captain Phelps immediately took possession of the fort ashore, spiked the guns, and then got his stores on board, and every thing ready for slipping his cables if necessary. The Alert had four 6-pounders on board, which were brought to bear on the shore; and, as the vessel lay within pistol-shot of the land, her guns fully commanded the beach. With a crew of sixteen men and boys, half a dozen hunters, (excellent riflemen,) and plenty of arms and ammunition, Capt. Phelps determined not to slip his cables or abandon his cargo on shore without burning a little gunpowder. Happily for the Mexicans, they kept out of the way until peace was declared. On the 1st of November the official intelligence of the evacuation of Monterey was received, and, as a matter of course, Captain Phelps ceased warlike operations, and commenced putting his ship in order for taking in cargo. The Alert is a fine, strong built ship of about 400 tons, has a flush-deck unincumbered with houses, and sails very well. She arrived at this port on Thursday afternoon.

The above will explain the rumor that was some time since going the rounds of the papers about the U. S. ship-of-war "Alert," spiking the cannon, &c., at San Diego.—*Boston Post.*

From the Pacific.—The following is extracted from a letter of an officer of the U. S. navy, dated Mazatlan, March 13:

"The Relief store-ship arrived here on the 10th, from Callao and Monterey, having left the former Nov. 20. The Cyane, Captain Stribling, arrived here Feb. 1 from San Pedro, with Commodore Jones on board, who had an interview with General Michieltorena, commander of the Mexican forces in California. The frigate United States, from the Sandwich Islands, was here when the Cyane arrived, and Commodore Jones rejoined her, and sailed March 1, for Valparaiso. He had just heard of his recall.

"Captain Richard Byron, of H. B. M. ship Champion, died on board at this place Feb. 23, and was buried under arms the next day. The boats, officers, marines, &c., of the American squadron, with the band of the frigate United States, assisted in the funeral ceremonies. The service was read over his grave by Mr. Bartow, chaplain of the United States. Mr. Parrott, U. S. Consul, has left for New York, to return again. The comet has been visible here every day or night since March 1."—*Boston Courier.*

LAUNCH OF THE RARITAN.—A communication from the Navy Department was received at the navy-yard yesterday, directing that the frigate Raritan be got ready, and launched without delay. We learn that it is found necessary to remove a portion of the copper put on this vessel nearly twelve months ago, and to recaulk some of her seams, which will give temporary employment to a number of additional workmen. The number of mechanics and laborers now employed in the yard is over 200.—*Philadelphia Chronicle, May 9.*

WASHINGTON AND FRANKLIN, 74's.—Orders have been received at the Brooklyn navy-yard to break up the first class line-of-battle ship *Washington*, as her timbers have been found to be too much decayed to admit of repair. The *Franklin*, of the same class, and built nearly at the same time, is to go round to the Boston navy-yard, in the course of a few days, to be *razeed*. The *Washington* has made but one cruise, under Commodore Chauncey—the *Franklin* two; but the latter was built wholly of live oak, while some of the timbers of the former were of white oak. This may account, in part, for the disparity in their condition: although even with frames entirely of live oak, there is often a very considerable difference in the duration of a vessel, according to the age of the tree when it is cut.

The frigate *Savannah*, we are informed, is all rigged, and after putting in her officers, crew, and stores, could be sent to sea at very short notice.

HUBBELL'S THUNDERBOLT SHELLS were tried on Thursday last, a short distance below Philadelphia, and were entirely successful. Their destructive powers is said to be so tremendous that they will tear a ship-of-war and destroy her crew with the rapidity of lightning. A great concourse of people assembled to witness the experiments, and several naval officers from the navy-yard were present, who considered the experiment in every way satisfactory.

DEATH OF A BRAVE OLD TAR.—The New York Courier notices the death of an old sailor, named Henry Moreland, a Virginian by birth, and about 65 years of age. Moreland, during the last war, fought side by side with the gallant Perry, was in the commodore's ship during the memorable battle on Lake Erie, and one of the crew, headed by Commodore Perry, that boarded the Lawrence, commanded by Commodore Elliott, during the midst of the fight, after Perry's vessel had been destroyed by the enemy.

IMPROVED SAW-MILL.—We learn from the New York Courier that important improvements have been made in the saw-mill by Colonel James Hamilton, of that city, which are destined, at no distant day, to effect a great revolution in ship-building. The British Government expended several thousands of pounds sterling many years since in attempts to invent effective mechanical means to convert timber into the forms required for ship-building, without arriving at any successful results. "It has been reserved for a son of New England," says the Courier, "after several years severe study and experiment, to provide any tolerable workman the means of directing a powerful mill-saw in the most tortuous curves which can ever be needed, while, at the same time, the mill itself, adjusted by a beautiful, because simple arrangement, *will roll the timber while the saw is cutting*, so that any given amount or angle of bevel can be cut in any length, with the same mathematical and mechanical certainty that is attendant on any other well-grounded mechanical combination."

It is further stated that any well-built existing saw-mill can have all these new powers attached to it at a moderate expense, and yet be made ready to use for common strait sawing, while a log is being rolled into its place for work. In short, while the capacities of the saw-mill are thus extended by a new means to an almost indefinite extent, it does not lose any previously existing facilities.

Foster Rhodes, Esq., one of the most experienced and scientific ship-builders living, speaking of the saw-mill with Mr. H.'s improvement, says, "this machine possesses that desideratum so long sought, viz: of being able to follow the natural form of the tree by which the material is not *grain-cut*."

Several other practical men concur in this opinion. The work which this machine can do has heretofore required the best of hand labor, perfected by years of practice, and in consequence costly in wages; besides which, the wood hewed out by hand, being in chips, is comparatively valueless. By this new process it may be taken off in a form fit to be made useful.—*Baltimore American.*

HYDROGRAPHICAL OFFICE.

WEATHER JOURNAL FOR THE WEEK ENDING SATURDAY, MAY 13, 1843.

DAYS.		Barometer.	THERMOMETERS.					WEATHER.	Portion cloudy.	WIND.	FORCE.
			Attach.	Sun.	Rad.	Shade.	W. Bulb.	Dew Pt.			
Monday, 8th,	3 A. M.	30.004	69°	60°	60°	62°	59°	57°	Nimbus,	1.0 Calm.	Airs.
Do.	3 P. M.	29.976	69	79	81	69 5'	60	58	"	1 SW.	
Tuesday, 9th,	3 A. M.	30.086	68 5'	54	54	56	53	53	Stratus.	1 Calm.	Airs.
Do.	3 P. M.	30.152	66	60	61	60	54	54	Cumulus.	.9 South.	
Wednesday, 10th	3 A. M.	30.184	68	50	50	53	50	49	Rain.	1.0 NE.	Airs.
Do.	3 P. M.	30.238	70	50	51	50	45	45	"		
Thursday, 11th,	3 A. M.	30.242	70	46	46	48	43	40	Drizzle.	1.0 North.	.13
Do.	3 P. M.	30.130	68	54	56	52	48	46	Light rain.	.0 N. NW.	.13
Friday, 12th,	3 A. M.	30.112	66	50	50	51	49	46	Clear.	.0 NW.	Airs.
Do.	3 P. M	30.078	66	103	109	73 5	59	50	Cirrus.	.2 N. N W.	Airs.
Saturday, 13th,	3 A. M.	30.082	66	53	53	55	50	46	Cirrus strat.	.2 SW.	
Do.	3 P. M.	29.978	68	100	101	74 5	63	60	Stratus.	1.0	

Maximum variation of the needle, 1° 36' 29" 75., at 2 h. P. M. on the 9th instant.
Minimum, " " 1° 22' 34" 75., at 10 h. A. M. on the 13th instant.
Mean variation for the week, " " 1° 31' 26."

WASHINGTON.

THURSDAY, MAY 18, 1843.

THE SIX NEW SLOOPS, AND A NEW PLAN.

We noticed in our last that preparatory orders had been given to lay down the keels of six new sloops-of-war, one at each navy-yard. The object of this distribution of them is, we suppose, to excite a spirit of emulation among the mechanics of the different yards, with the view of giving them an opportunity of contending for the palm of skill and superior workmanship, and to see which can build cheapest.

But there is a plan, first suggested, we believe, by Harry Bluff, in his "Lucky Bag" pieces, which we have no doubt, if tried, would prove much more economical than any of them, and that is, by having them built in the yards, by contract, instead of by the day's work. We respectfully invite the attention of the Secretary to this plan; and as the present is so favorable an opportunity for giving it a trial, we take the liberty of urging it, with the hope that it may be adopted. This contract plan should not be considered as an experiment: it was adopted on the lakes during the war. Then, *despatch* was the word; and there was a number of contractors to each ship. One, for instance, contracted to plank up the larboard side within a certain time, another the starboard, and so on. The officers were on the ground to superintend the work. The consequence was cheap work, and a degree of energy and activity which has never been known at one of our navy-yards; from early dawn, till late at night, the sound of the axe and the hammer was heard upon the waters of the lakes, and in the forests on their borders; trees that were standing in the morning, often, before night, had become parts of ships.

There is a man-of war brig of 270 tons now under contract in a private yard at Baltimore, for $20,000. This is almost twice as cheap as the cheapest vessel of her class that has been built at our navy-yards, and more than twice as cheap as the average of them. The schooner Shark, but little more than half the size of this brig, cost $45,000 only to be *repaired* at a navy-yard. There is the merchant-built ship Relief, for carrying stores to our squadrons abroad. She is about 400 tons, was built at the Philadelphia navy-yard by the day, and cost $85.000. *Per contra*, there is the Liverpool packet Ashburton, in comparison with the Relief a palace to a hovel. She is upwards of a 1,000 tons, and cost but $72,000.

Besides, this principle of exciting emulation among the mechanics at different yards has been before tried, and has signally failed to put them to their mettle. There are the two steamers Missouri and Mississippi, that were built at Philadelphia and New York upon this principle; they each cost upwards of a half a million. Since then, the experiment has been repeated in a smaller way. Certain row-boats, exactly after the same model, and the same in all respects, were ordered to be built at two navy-yards. The boat at one cost about $500, at the other $900; and though but a common row-boat, she was charged in the building with one year's labor for one man, *minus* seventeen days. We have, therefore, the lights of experience and actual results to justify the little confidence we have as to the economy of building ships upon this plan of emulation.

Now, the plan that we urge and advocate is this: Let the model of the vessel be determined upon, and then let due notice be given that contracts will be let on a certain day to the lowest bidder for building, etc., under the superintendence of the constructor and other officers of the yard; and the vessel may be let in as many separate contracts as there are crafts and trades employed in her construction. Her frame is already provided: let out the putting together of that to the lowest bidder, to be completed within a certain time; then the planking up of one side to one, and the laying of the decks to another; the joiner's work of the cabin to a third, that of the birth-deck, &c., to others; dividing the number of contracts according to the degree of despatch required.

One peculiar advantage of this plan is, that it would require no capital on the part of the contractor, and therefore there would be the greater competition at the lettings. All the materials, work-shops, and tools are already provided by the Government. There are the canvas and the sail-loft. Let the making of the sails be one contract, having a sailmaker of the navy to superintend the cutting, the bolting, and the economical use of the canvas. In another loft there is the rigging. Contract with riggers for the cutting, the fitting, and the setting up of a proper gang of rigging, under the immediate superintendence of the master or boatswain. So with the masts, the boats, and the spars, the caulking, the coppering, and the painting.

The number of mechanics on Government wages at the Norfolk and New York yards is so great, that viewing, as perhaps they would do, this plan as an interference with them, and perhaps as an innovation upon their rights, they might take it into their heads to threaten, if not to throw serious obstacles in the way of those who, under such circumstances, should be disposed to put in for a contract. On this account we would suggest the Philadelphia yard as the most suitable one for the experiment, on account of the small number of mechanics usually employed at that yard. We are no betting man, but we are willing to "lay our pudding and grog both, next 'duff-day,'" that the cost of one of the six sloops built after

this plan, would be at least one-third less than the cheapest of the five others; and that, if despatch were required, she could be out at sea before any one of the others would be launched.

That the Secretary desires to reform the navy, and so to administer its affairs as to leave behind him a monument of fame, we have no doubt. As likely to promote and realize his patriotic wishes in this respect, we cannot too earnestly press this hint upon his consideration.

ARMY MEDICAL BOARD.—A board will convene at the city of New York, on the 1st July, for the purpose of examining the Assistant Surgeons who may be ordered to appear before it; and such applicants for appointment in the Medical Staff of the army as may be invited to attend.

The board will consist of Surgeons THOMAS G. MOWER, HENRY A. STINNECKE, CHAS. S. TRIPLER, and Assistant Surgeon J. J. B. WRIGHT, as Surpernumerary and Recorder.

A Board of Naval Constructors will assemble in Washington, on Thursday next, the 25th instant, for the consideration of subjects connected with the building of vessels of war. The board will consist of Colonel S. HUMPHREYS, Chief Naval Constructor, Messrs. F. GRICE, J. LENTHALL, F. RHODES, and C. D. BRODIE. Apart from the well known talents and skill of the members of this Board, we anticipate the most beneficial results from their deliberations.

NAVAL COURT MARTIAL.

Commander RAMSAY, accompanied by his counsel, P. P. Mayo, Esq., appeared before the court yesterday, and before proceeding with his defence, requested that his correspondence with the Secretary of the Navy and Com. STEWART might be read. The court was cleared for deliberation, and upon being re-opened, the Judge Advocate informed Comm'r RAMSAY that the court had decided that he might read such portions of it as he deemed pertinent to his defence. Comm'r RAMSAY then read his defence, which occupied him about one hour and three quarters.

The court was afterwards cleared and a decision pronounced in the case.—*Norfolk Beacon, May* 16.

NORFOLK, *May* 15.

The U. S. steamer *Union*, Lieut. Comm'g Hunter, will leave this morning for Boston, touching at the Eastern Shore to land the Hon. A. P. UPSHUR.

The Secretary of the Navy visited the Dismal Swamp canal and lake Drummond on Friday; accompanied by the President and Directors of that Company, and was joined by Com. Warrington and others on Saturday, on his return towards Gilmerton. The importance of this admirable work to the naval establishment at Gosport, is properly appreciated by the enlightened head of the Navy Department.

A draft of U. S. seamen under command of Lieut. Shaw, arrived here yesterday in the steamer *Georgia*, Captain Coffey, from Baltimore.—*Beacon.*

From the New York American.

COMMANDER MACKENZIE.

The president of every marine insurance company, all the chief shipping houses, all the packet captains within reach—a class apart, and most remarkable in this great community—and, in short, almost all who give to New York commerce and New York character its impulse and nourishment, have signed the following letter to Mr. MACKENZIE.

We may say here, although with great delicacy all allusion to such a fact is withheld in the correspondence, that the gentlemen signing this letter have claimed the right and the privilege of paying every expense to which Mr. MACKENZIE has been subjected by the various trials to which he has been exposed.

NEW YORK, *April* 18, 1843.

To Commander A. S. Mackenzie:

SIR: Your commercial and maritime countrymen have a duty to perform to you, in relation to your suppressing the mutiny on board the U. S. brig Somers. Your conduct has been submitted to your superiors in the naval service, and has been approved. You have been tried by your equals, and acquitted with honor. That acquittal, through its highest functionaries, has been approved by your country.

It is now becoming in your countrymen to unite their voice with these public decisions, and to assure you of their sympathy and approval.

A mutiny in a national ship is, itself, a heavy public calamity, full of danger, immediate and remote, to the best interests of your country. The turning of your ship into a sea-rover would have made the entire ocean a scene of outrage, rapine, and murder. The land, also, would have rung with cries of distress.

That such a mutiny should have been organized by an officer who had every advantage of connections, education, and talents to seduce the common sailor, and to carry into effect his further purposes, was giving to the danger a form the most urgent and appalling.

The weakness of your defences, the immature age and unsubdued, youthful, reckless passions of your crew; the certainty that to punish the ringleader would expose you to the utmost hostility of his friends, every way powerful, and that the inconsiderate pity of many might embody a formidable opposition against you, rendered the necessary discipline and punishment full of peril to yourself. But last and chiefest, the horror of an officer being obliged to execute, without the ordinary forms of the justice of his country, a brother officer and two of his crew, made your position painful and difficult without a parallel. Under such circumstances you carried into effect the authority of your ship, restored its discipline, saved the honor of our navy, the commerce of your country, and the lives of your associates, and rescued countless numbers from every form of outrage and death. By decision, energy, and lofty courage, putting at risk your fame, honor, and life, you met such dangers.

You have thus entitled yourself to our warmest thanks and highest praise. The fearful example will not be without its effect. Lawless ruffians will not dare to seek in the naval service the means of consummating their crimes. Your brother officers will not hesitate to discharge their duty in enforcing discipline. Well-disposed seamen will not fear the taint of a service where mutiny and murder may go unpunished; and although we cannot withhold our sympathy from the relatives of the mutineers, yet our regret is that the crimes were conceived which rendered punishment necessary, and not that punishment has been inflicted.

As for us, we present our thanks to you. We offer you our congratulations on your honorable acquittal. We present you our best wishes, that your country may reward, and the world may acknowledge, your decision, courage, and patriotism.

We remain, with great respect,

New York Insur. Co., B. McEvers, Pres't.
Atlantic Insurance Co., W. R. Jones, Pres't.
Mutual Safety Ins. Co., Z. Cook, jr., Pres't.
General Mutual Insur. Co., N. G. Rutgers, Vice President.
Sun Mutual Insur. Co., A. B. Neilson, Pres't.
Jackson Marine Insur. Co., S. Baldwin, Pres't.
Alliance Mutual Ins. Co., Jacob Harvey, Pres't.
David B. Ogden,
Daniel Lord, jr.,
John Anthon,
George Wood,
J. Prescott Hall,
Samuel A. Foot,
Hiram Ketchum,
Marcus T. Reynolds,
Samuel M. Woodruff,
J. J. Van Rensselaer,
Robert C. Cornell,
Lockwood De Forest,
Wm. Nelson,
Gordon & Talbot,
Haven & Co.
John R. Hurd,
Center & Co.
Nevins, Townsend, & Co.
John T. Smith,
Joseph Foulke & Sons,
Tucker, Cooper, & Co.,
Wm. H. Russell,
R. Withers,
John Coyder,
Halsted, Haines, & Co.,
John P. Staag.
S. Grosvenor & Co.
Charles M. Leupp,
Jonathan Hillman,
Herriman, Nash, & Co.,
E. G. Faile & Co.,
Nicholas Saltus,
Sprague, Robinson, & Co.,
Daniel S. Miller,
Jonathan Sturges,
Wisner, Gale, & Co.,
C. & L. Dennison & Co.,
N. T. Hulbard, Chenery, & Co.,
N. L. & George Griswold,
Boorman, Johnston, & Co.,
Goodhue & Co.,
Andrew Foster & Sons,
Grinnell, Minturn, & Co.,
John C. Green,
Wm. W. De Forest & Co.,
E. K. Collins & Co.,
Howland & Aspinwall,
Hicks & Co.,
Benjamin L. Swan,
Spafford, Tileston, & Co.,
Brown, Brothers, & Co.,
C. Bolton, Fox, & Livingston.
C. H. Marshall,
John Griswold,
Robert Kermit,
E. D. Hurlbut & Co.,
Davis, Brooks, & Co.,
P. Harmony's, Neph's, & Co.,
Alsop & Chauncey,
Wm. Whitlock, jr.
Prime, Ward, & King,
Barclay & Livingston,
John H. Howland,
James Lee & Co.,
Joseph Kernochan,
Benj. De Forest & Co.,
Taylor & Merrill,
Sands, Fox, & Co.,
Bogert & Kneeland,
Woodhull & Minturns,
Cary & Co.,
Wm. S. Wetmore,
Wetmore & Co.,
Allen & Paxson,
Charles N. Talbot,
David Olyphant,
George Douglass,
John Haggerty & Sons,
Austen, Wilmerding, & Co.,
Peter I. Nevius & Sons,
Joseph Sampson & Co.,
L. M. Hoffman & Co.,
Wm. H. Howland & Co.,
Silas Holmes,
James D. P. Ogden,
Tonnele & Hall,
S. T. Nicoll,
James W. Otis,
Jacob R. Le Roy,
Abm. Farden & Sons,
Everett & Battelli,
Shepherd Knapp,
Samuel Bell,
Henry Coit & Co.,
Thomas P. Stanton,
Samuel Judd's Sons,
Eli White & Son,
Wm. S. Packer,
Prentice, Finn, & Co.,
A. H. Center & Son,
Russell Dart,
John Jewett & Sons,
Stone, Swan, & Co.,
E. & J. Herrick,
Chester, Clark, & Co.,
Penfold & Schuyler,
Wm. G. Bull & Co.,
James McCullough,
Galliard & Embury,
W. A. F. Pentz,
T. Vietor & Duckwitz,
George Hastings,
Samuel Packwood,
Thomas Barron,
Henry Coggill,
Robert Hyslop,
Thomas W. Ogden,
J. Foster,
J. N. Cobb,
James & George Brooks & Co.,
Wm. P. Miller,
John Bullard, jr.
Loring Andrews,
George Palen,
A. G. Hazard & Co.,
Ezra Lewis,
E. T. H. Gibson & Co.,
Dows & Guiteau,
James W. Bleecker,
Francis Leland,
Wm. G. Ward,
Joseph Battelle,
P. Schlesinger,
Ephraim Corning,
N. T. Carryl,
Henry Gardner,
Richard P. Buck,
Benjamin Richards,
C. & F. Waldo,
Paul Babcock,
John Wurts,
Bartlett & Abbatt,
Nicholas Low,
George Bulkley,
Samuel G. Cornell,
P. C. Cornell,
John Laidlaw,
P. & H. Van Nest,
Bucklin & Crane,
Butler & Barker,
Robert Bayard,
Morris Ketchum,
Philetus H. Holt,
Jasper Corning,
George S. Puffer,
James W. Anten,
Benjamin A. Mumford,
Samuel P. Lord,
Charles E. Quincey,
Guy Richards,
O. J. Hayes,
J. Howard & Sons,
Hamilton Murray,
Charles E. Townsend,
Wilson, Mills, & Co.
Francis P. Sage,
Eli Hart & Co.,
W. R. & C. Hitchcock,
Joseph Hudson,
Slate, Gardiner, & Howell,
Abraham Richards,
Cooper & Giraud,
Johnson & Lowden,
Henry Holdrege,
Samuel L. Mitchell,
J. & L. K. Bridge,
Joseph B. Varnum,
J. W. Leavitt,
Christopher Wolfe,
D. A. Cushman & Co.,
Robert Jaffray & Co.,
Edwin Hoyt,
Frederick L. Talcott,
T. Putnam & Co.,
Lane, Lamson, & Co.,
Nesmith & Co.,
George S. Robbins,
Abijah Fisher,
R. & H. Haight & Co.,
G. A. Worth,
F. C. Tucker,
W. B. Post,
G. G. Howland,
Thomas Suffern,
Samuel S. Howland,
James Boyd,
Joseph Bouchaud,
Ketchum & Ten Broeck,
Wilson & Co.,
E. D. Comstock,
E. W. Dunham & Son,
Wm. S. Bogert,
A. & J. Mattison,
Wm. Dodge & Son,
C. N. S. Rowland,
De Peyster & Whitmarsh,
O. Mauran,
Foster & Nickerson,
Russell Sturges,
James H. Braine,
Timothy T. Kissam,
Wm C. Dougherty,
Brinckerhoof, Fox, & Polhemus,
T. J. Waters,
Edward S. Bibby,
Charles L. Livingston,
S. C. Marsh,
George W. Blunt,
Irving Van Wart,
N. Low,
James Rogers,
N. G. Kortright,
David C. Colden,
John C. Delprat,
Wm. C. Emmet,
George F. Tallman,
Herrick & Van Boskerck,
David Dows,
James B. Douglass,
W. H. & J. C. Minturn,
Mulford Howes,
E. M. Cowdrey,
James L. Varick,
Francis Draz,
George McBride, jr.,
Frederick W. Favre,
O. F. Gleim,
Dwight Johnson,
John Beale,
Oelrichs & Kruger,
Samuel Hotaling,

E. Dunscomb & Beckwith,	D. H. Robertson,
H. G. Sandford,	E. H. Tompkins,
Allen & Whittlesey,	J. T. Merritt,
Elijah Hoppock,	Henry Haviland,
Charles L. Vose,	J. Elnathan Smith,
Wm. H. Harbeck,	Samuel Candler,
Bradish & Johnson,	George Leland,
J. F. Clarkson,	D. & A. Kingsland & Co.
George W. Attwood,	Wm. C. Tallmadge,
John Goldschmidt,	A. B. Howard,
J. Y. Gibson,	Egbert K. Van Buren,
Philip Speyer,	James P. Wallace,
Henry Holt,	Edward Bill,
Edward Remsen,	Theron Losee,
George Merle,	Charles Williams,
James O. Proudfit,	Schmidt & Balcher,
Alexander Mattison,	Henry Barclay,
John W. Quincey,	Ph. Woodhouse,
William L. Stone,	James Bell,
Charles A. Jackson,	James P. Drummond,
	Francis Hall.

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REPLY.

TARRYTOWN, *May* 6, 1843.

GENTLEMEN: I have read with deep interest, and with emotions of no ordinary sensibility, the letter which you have done me the honor to address to me. The testimony you have borne to the purity of the motives by which I was governed in performing a painful act of summary justice, under the pressure of an overruling necessity, has such force and value, that I gladly receive it as a fair expression of the judgment of that great popular tribunal to which, in our country, all matters of general interest are finally submitted; and to the document which contains it, I, and my children after me, will ever attach a priceless value.

Your judgment forever sets at rest the suspicion, if such has, indeed, been sincerely entertained, that my acquittal by the Naval Court of Inquiry and Court Martial was in any degree owing to the professional sympathy of my brother officers, and not wholly to the intrinsic justice of my defence, and the irresistible evidence on which it rested. When I look at the names of those who have subscribed the letter before me, and reflect on their standing and position; their capacity of forming a sound judgment, their admitted intelligence, and unsullied probity, I cannot but regard the opinions it expresses as conclusive evidence that the judgment of the navy is ratified by the verdict of my country. This is the verdict best suited to sustain that consciousness of having acted from a sense of duty, which has hitherto been my support; a sense of duty so solemn and imperative, that had I refused to obey its voice, sanctioned as it was by the deliberate opinion of all the officers who were associated with me, I should have been guilty of disloyalty to my country and treason to the cause of humanity.

For the kindness which has impelled you to convey to me this invaluable expression of sympathy and approbation, I beg you to accept, collectively and individually, the assurance of my warm and lasting gratitude.

I am, gentlemen, very truly and respectfully, your obliged and most obedient,

ALEX. SLIDELL MACKENZIE,

Commander U. S. N.

Messrs. N. L. & G. GRISWOLD, *and others, New York.*

REVENUE CUTTER SERVICE.

LIST OF OFFICERS, CORRECTED TO MAY 15, 1843.

Captains.

No.	Names.	Date of commission.	Name of vessel
1.	John A. Webster,	Nov. 22, 1819,	Taney.
2.	Winslow Foster,	Mar. 22, 1821,	Woodbury.
3.	Henry D. Hunter,	Nov. 15, 1824,	Forward.
4.	William W. Polk,	July 25, 1825,	Waiting ord.
5.	Nicholas Bicker,	Aug. 29, 1828,	Ewing.
6.	Andrew Mather,	April 4, 1829,	Madison.
7.	Robert Day,	June 2, 1832,	Crawford.
8.	Ezekiel Jones,	Jan. 4, 1833,	Sick.
9.	Thos. C. Rudolph,	June 2, 1834,	Duane.
10.	Caleb Currier,	April 20, 1838,	Sick.
11.	Green Walden,	Nov. 21, 1838,	Morris.
12.	Henry B. Nones,	Dec. 14, 1838,	Waiting ord.
13.	Josiah Sturgis,	Dec. 14, 1838,	Hamilton.
14.	Henry Prince, jr.,	Oct. 24, 1839,	Wolcott.
15.	John Whitcomb,	Dec. 9, 1839,	Alert.
16.	Gilbert Knapp,	Mar. 15, 1841,	Erie.
17.	L. C. F. Fatio,	May 12. 1841,	Van Buren.
18.	Michael Conner,	Jan. 19, 1842,	Jackson.
19.	Alex. V. Fraser,	Feb. 1, 1842,	Bureau at Wash'ton.
20.	Wm. A. Howard,	Dec. 19, 1842,	Special duty.

First Lieutenants.

1.	Richard Evans,	Jan. 1, 1833,	Taney.
2.	Napoleon L. Coste,	Jan. 4, 1833,	Van Buren.
3.	W. B. Whitehead,	June 11, 1834,	Crawford.
4.	Gay Moore,	Feb. 10, 1836,	Special duty.
5.	Levi C. Harby,	July 5, 1836,	Reve. boat St. Mary's.
6.	John J. Nimmo,	April 23, 1838,	Madison.
7.	Douglass Ottinger,	Aug. 6, 1838,	Special duty.
8.	Charles Grover,	Aug. 6, 1838,	Forward.
9.	Thomas Sands,	Nov. 21, 1838,	Wolcott.
10.	Thomas Stoddard,	Dec. 14, 1838,	Alert.
11.	Francis Martin,	July 24, 1839,	Ewing.
12.	Stephen Cornell,	Oct. 24, 1839,	Jackson.
13.	Joseph A. Noyes,	Oct. 24, 1839,	Special duty.
14.	John McGowan,	Feb. 17, 1841,	Special duty.
15.	James H. Roach,	Feb. 17, 1841,	Hamilton.
16.	Henry Drake,	Feb. 1, 1842,	Woodbury.
17.	George Clarke,	Nov. 17, 1842,	Nautilus.
18.	John B. Fulton,	Mar. 4, 1843,	Morris.

Second Lieutenants.

1.	Stephen Thatcher,	Jan. 18, 1831,	Sick.
2.	George Berryman,	Aug. 6, 1838,	Erie.
3.	Arnold Burrough,	Dec. 14, 1838,	Morris.
4.	Beverly Digges,	Dec. 14, 1838,	Wolcott.
5.	Supply C. Foss,	April 29, 1839,	Reve. boat Castine.
6.	Jas. J. Morrison,	July 24, 1839,	Crawford.
7.	Osmond Peters,	July 24, 1839,	Sick in N. Y.
8.	Blyden Hedge,	Oct. 24, 1839,	Nautilus.
9.	J. S. S. Chaddock,	Oct. 24, 1839,	Special duty.
10.	Caleb Prouty,	Dec. 9, 1839,	Hamilton.
11.	Joseph Amazeen,	Dec. 9, 1839,	Van Buren.
12.	William Norris,	Feb. 17, 1841,	Jackson.
13.	John Faunce,	June 5, 1841,	Forward.
14.	Wm. B. McLean,	Sept. 24, 1842,	Woodbury.
15.	H. H. Greene,	Nov. 17, 1842,	Alert.
16.	John L. Prouty,	Mar. 4, 1843,	Jackson.
17.	William Pease,	Mar. 4, 1843,	Ewing.
18.	Chas. W. Bennett,	Mar. 4, 1843,	Wolcott.
19.	John L. Stull,	Mar. 4, 1843,	Bureau at Wash'ton.
20.	Edward Smoot,	Mar. 4, 1843,	Duane.
21.	Wm. M. Wilson,	Mar. 4, 1843,	Crawford.
22.	J. G. Breshwood,	Mar. 4, 1843,	Waiting ord
23.	Nicholas Austin,	Mar. 4, 1843,	Madison.

Third Lieutenants.

1.	John M. Jones,	Dec. 16, 1839,	Van Buren.
2.	George Hayes, jr.,	Feb. 17, 1841,	Alert.
3.	James H. Jones,	Feb. 17, 1849,	Forward.

4. Robert K. Hudgins, Feb. 24, 1842, Taney.
5. Edward Gooding, Nov. 17, 1842, Woodbury.
6. John T. Stoneall, Nov. 17, 1842, Ewing.
7. J. A. Webster, jr., Nov. 17, 1842, Taney.
8. Josiah Murch, Jan. 16, 1843, Coast survey.
9. Wm. H. Brown, Jan. 17, 1843, Forward.
10. John Hendren, Jan. 26, 1843, Ewing.
11. Richard S. Jones, Jan. 27, 1843, Madison,
12. E. C. Kennedy, Jan. 28, 1843, Waiting ord.
13. Wm. R. Pierce, Jan. 30, 1843, Wolcott.
14. W. Scott Bell, Feb. 6, 1843, Woodbury.
15. C. L. Collier, Mar. 1, 1843, Van Buren.
16. Henry J. Benson, Mar. 6, 1843, Erie.
17. Cam'lus Saunders, Mar. 6, 1843, Jackson.
18. Bush. W. Frobel, Mar. 6, 1843, Crawford.
19. Charles F. Wood, Mar. 6, 1843, Morris.
20. Hezekiah Parmele, Mar. 7, 1843, Hamilton.
21. K. S. Woodward. Mar. 11, 1843, Nautilus.

NAMES AND STATIONS OF REVENUE CUTTERS.

Alert,	Eastport,	dist. of Passamaquoddy.
Morris,	Portland,	Portland.
Hamilton,	Boston,	Boston.
Jackson,	Newport,	Newport.
Madison,	New London,	New London.
Ewing,	New York,	New York.
Forward,	Wilmington,	Delaware.
Wolcott,	Baltimore,	Baltimore.
Taney,	Norfolk,	Norfolk.
Van Buren,	Charleston,	Charleston.
Crawford,	Savannah,	Savannah.
Nautilus,	Key West,	Key West.
Duane,	Mobile,	Mobile.
Woodbury,	New Orleans,	New Orleans.
Erie,	Lake Erie,	Presque Isle.

The cutter *Jefferson* has been condemned as unfit for repairs, and ordered to be sold at New York; and the schooner *Nautilus* has been transferred from the coast survey to supply the place of the Jefferson. Second Lieut. Charles W. Bennett and third Lieuts. Wm. H. Brown and K. H. Woodward are ordered to deliver the Nautilus at Key West; when Lieuts. Bennett and Brown will return and resume their duties on board the *Wolcott* and *Forward*.

Second Lieut. Osmond Peters has been reinstated, with his former rank and date.

Military Intelligence.

3D INFANTRY.—Captains L. N. Morris, O. Wheeler, and J. Vanhorne; 1st Lieuts. J. M. Smith and S. D. Dobbins; 2d Lieuts. R. R. Johnson, O. L. Shepherd, J. B. Richardson, W. T. A. Brooks, and C. T. Baker; Ass't Sur. W. Levely, and 323 privates, arrived at Jefferson Barracks on the 21st April, in the steamer *Meteor*, from New Orleans.

Lieut. Col. E. A. Hitchcock, Major W. W. Lear, Captains H. Bainbridge, and J. W. Cotton; Adjutant P. N. Barbour; 1st Lieuts. W. S. Henry, L. S. Craig, and W. H. Gordon; 2d Lieuts. W. B. Johns, D. S. Irwin, T. Jordan, D. C. Buell, A. W. Bowman, and G. Sykes; Ass't Sur. A W. Kennedy, and 312 privates, arrived at Jefferson Barracks, shortly after the *Meteor*, in the steamer *Ben. Franklin*, from New Orleans.

DRAGOONS.—Two companies at Fort Leavenworth and one at Fort Scott have been ordered out, and will be prepared and held in readiness to march to the boundary line between the United States and New Mexico, on the route to Santa Fe, as an escort, for the protection of any and all persons who may be desirous of availing themselves of it, and who shall be engaged in lawful trade and intercourse between the two countries.—*N. O. Tropic.*

NAVY.

May. ORDERS.

10—Lieut. T. A. M. Craven, receiving-ship, N. Y.
Assist. Surg. W. B. Sinclair, brig Somers, *vice* J. J. Brownlee, detached on account of ill health.
Passed Mid. J. S. Neville, coast survey, under Com'r Gedney.
Mid. P. Wager, jr., detached from receiving-ship, New Orleans.

11—Lt. Henry French, leave three months, having returned from the coast of Brazil by permission.
Assist. Sur. J. S. Whittle, order to frigate Brandywine revoked, and to rejoin naval hospital, Norfolk.
Assist. Sur. A. F. Lawyer, frigate Brandywine.
Boatswain John Morris, receiving-ship, Boston.
Master's Mate J. J. Power, store-ship Lexington.

12—Captain Isaac McKeever, command of ship Independence.

13—Lieut. Peter Turner, Brazil squadron.
3d Assist. Eng. S. Thompson, jr., steamer Missouri.

15—Passed Mid. George Wells, sloop Saratoga, as acting master, *vice* C. K. P. Rodgers, detached, and waiting orders.
Passed Mid. W. Reid, depot of charts, Washington.

16—Passed Mid. D. Ammen, order to coast survey, revoked.
Mid. J. Howard March, steamer Missouri.

May. RESIGNATIONS.

10—David Williamson, midshipman.
15—James T. Homans, lieutenant.

Naval Intelligence.

U. S. VESSELS OF WAR REPORTED.

The receiving-ship *Ohio*, Captain Smith, at Boston, took her summer moorings off Long wharf, on Tuesday, the 9th instant.

HOME SQUADRON.—Flag-ship *Independence*, Capt. Stringham, arrived at New York on the 11th inst. Officers and crew all well.

Sloop *Vandalia*. Comm'r McCluney, sailed on Thursday last from Hampton Roads for Chagres, with Commodore Dallas and other passengers; got under way at 7 A. M., and in four hours was twenty miles at sea, Cape Henry bearing W. by N., with a strong breeze from W. N. W.

Sloop *Marion*, Comm'r Armstrong, was at St. Thomas on the April; would take on board eleven mutineers, landed at St. Thomas from the ship Metoka, and proceed with them to the United States.

PACIFIC SQUADRON.—Frigate *United States*, Capt. Armstrong, at Mazatlan, March 13.

Sloop *Cyane*, Comm'r Stribling, arrived at Mazatlan February 1 from San Pedro, and sailed March 1 for Valparaiso, with Commodore Jones on board.

Store-ship *Relief*, Lieut. Comd't Sterett, arrived at Mazatlan, March 10, last from Monterey.

BRAZIL SQUADRON.—Frigate *Columbia*, Captain E. R. Shubrick, sloop *John Adams*, Comm'r Conover, and schooner *Enterprise*, Comm'r J. P. Wilson, were at Montevideo, March 19. All well.

EAST INDIA SQUADRON.—Frigate *Constellation*, Commodore Kearny, at anchor at the second bar, near Macao, on the 1st February.

A draft of thirty-seven recruits for the U. S. naval service left Charleston on Saturday morning, in the schooner *Henrietta*, for Norfolk, Va., in charge of Lieut. North, accompanied with Passed Midshipman Charles Deas and Dr. Cross.

The receiving-ship *North Carolina*, Capt. Gregory, at New York, has removed to her summer moorings.